wherein at least one of said monomeric unit transmits a detectable signal selected from the group consisting of a fluorescent signal, an optical signal, an electrochemical signal, a pressure change, a dielectric constant change, a mass change, a volume change, and a temperature change in response to the change in the three-dimensional conformation of the biopolymer.

12. (Once Amended) A synthetic multimeric biopolymer comprising two or more monomeric units selected from the group consisting of a protein, a polypeptide, a nucleic acid, and a peptide nucleic acid,

wherein said monomeric units are the same or different and are linked to each other,

wherein at least one of said monomeric units comprises a binding region for an analyte, and

wherein binding of the analyte to said binding region results in a change in conformation of said monomeric unit and the formation of protons or hydroxides or the transmission of a detectable signal by at least one other monomeric unit of the multimeric polymer.

14. (Once Amended) The biopolymer of claim 12 wherein said biopolymer comprises a monomeric unit that transmits a detectable signal selected from the group consisting of a fluorescent signal, an optical signal, an electrochemical signal, a pressure change, a dielectric constant change, a mass change, a volume change, and a temperature change in response to the change in the three-dimensional conformation of the biopolymer.

41. (Once Amended) A synthetic multimeric biopolymer comprising two or more monomeric units selected from the group consisting of proteins, polypeptides, nucleic acids, peptide nucleic acids, and combinations thereof;

wherein said monomeric units are the same or different and are linked to each other;

wherein a plurality of said monomeric units in said biopolymer comprise a binding region for an analyte,

wherein each of the monomeric units that comprise a binding region for an analyte exhibits a change its three-dimensional conformation in response to binding of the analyte to said monomeric unit; and

wherein said multimeric biopolymer exhibits a greater change in its three-dimensional conformation in response to binding of the analyte to said binding region of said monomeric units than the conformational change that occurs in an individual monomeric unit as a result of binding of an analyte to said individual monomeric unit.

Please cancel claims 16- 37 without prejudice or disclaimer.

Please add the following claims.

42. (New) The synthetic multimeric biopolymer of claim 1 wherein said monomeric units are attached to each other by peptide bonds.

43. (New) The synthetic multimeric biopolymer of claim 1 wherein said monomeric units are chemically cross-linked to each other.

44. (New) The synthetic multimeric biopolymer of claim 12 wherein said monomeric units are linked to each other by peptide bonds.

45. (New) The synthetic multimeric biopolymer of claim 12 wherein said monomeric units are chemically cross-linked to each other.

46. (New) The synthetic multimeric biopolymer of claim 41 wherein said monomeric units are linked to each other by peptide bonds.

47. (New) The synthetic multimeric biopolymer of claim 41 wherein said monomeric units are chemically cross-linked to each other.

48. (New) The synthetic multimeric biopolymer of claim 1 wherein said biopolymer comprises a plurality of monomeric units that comprise one or more binding regions for an analyte and that change their three dimensional comprises in response to binding of an analyte to said monomeric unit.